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NATIONAL RESEARCH COUNCIL

EXTRACTS FROM THE MINUTES OF THE MEETING OF THE EXECUTIVE BOARD

AT THE NATIONAL RESEARCH COUNCIL BUILDING, APRIL 15, 1919, AT 9.30 A.M.

Present: Messrs. Bancroft, Clevenger, Cross, Dunn, Flinn, Hale, Howe, Hussey, Johnston, Leuschner, Merriam, Millikan, Noyes, Walcott, Washburn and Yerkes. Mr. Hale in the chair.

The minutes of the meeting of the Executive Board, March 11 and of the meetings of the Interim Committee, March 18, 25, April 1, and April 8, were approved. The actions taken by the Interim Committee are included in the record of these minutes.

At these various meetings reports were presented by the Chairman of the Council and by the Chairmen of the Divisions of Science and Technology on the progress of the nominations from scientific and technical societies for representatives to serve on the Divisions of Science and Technology of the Council, on the organization meetings of various Divisions and on the election of officers, executive committees, and sub-committees of the Divisions. In accordance with action taken by the Executive Board, each divisional organization will be printed in the PROCEEDINGS after its completion and subsequent approval by the Executive Board, except that sub-committees of Divisions will be reported in the Minutes of the meeting at which they are approved. The membership and officers of the Divisions of Physical Sciences, of Engineering, of Chemistry and Chemical Technology, of Geology and Geography, and of Biology and Agriculture are announced in the present number.

Moved: That the first meeting of each of the permanent Divisions, at which the Division is organized and elects its officers and executive committee, be recognized as the annual meeting of the Division for this year. (*Adopted.*)

Moved: That all appointments made hereafter shall be considered to terminate on the last day of June of the appropriate year. (*Adopted.*)

Moved: That the question as to when the present membership of the Council ceases be referred to the Committee on Orzanization with the request that they formulate and circulate resolutions regarding this matter before the next meeting of the Interim Committee. (*Adopted.*)

Moved: That the Secretary be requested to bring to the attention of the Divisions the provisions of Section 6, Article V, for fixing by lot the term of office of the new members of the Divisions. (*Adopted.*)

Moved: That the Division of Physical Sciences be authorized to appoint a special committee to consider the advisability of enlarging the functions of the International Bureau of Weights and Measures and to prepare suitable recommendations in this respect.

Moved: That an additional allotment of $1,000 be made to the general maintenance fund of the Engineering Division; and that the transportation expenses of the members of the Division attending the first meeting, be met by the Council. (*Adopted.*)

Moved: That an appropriation of $500 be made to the Executive Board to cover the expense of preparation of an annotated analytical bibliography, according to the scheme proposed by Mr. Fulcher, of the literature dealing with the effects of over-strain and blue heat on steel. (*Adopted.*)

Moved: That in view of Mr. Hale's desire to be relieved of his duties as Chairman of the Council at an early date Mr. J. C. Merriam be elected Acting Chairman as from March 15. (*Adopted.*)

Moved: That there be constituted an Interim Committee of the Executive Board which shall include in its membership the Chairman, Secretary, and Treasurer of the Council and the Chairman (or in his absence the Vice-Chairman) of each of the Divisions of the Council; that the Chairman of the Council shall be Chairman of the Interim Committee; and that this Interim Committee shall act for the Executive Board between meetings of the latter. (*Adopted.*)

Moved: That reports of the conferences of members of the Council with research representatives of Middle West and Pacific Coast institutions, held at Chicago and at Berkeley, California, on February 1st and March 8th, respectively, be incorporated in the minutes of the Council. (*Adopted.*)

Moved: That an address entitled 'Industrial Research' by Dr. Frank B. Jewett, which was presented before the Royal Canadian Institute, Toronto, February 8, 1919, be published as a bulletin of the National Research Council. (*Adopted.*)

The Chairman of the Council presented a communication from the Secretary of the General Education Board, informing the Council that the Board had made an appropriation of $25,000 for the purpose of a study to be conducted under the auspices of the National Research Council by Mr. Robert M. Yerkes and Mr. Lewis M. Terman for the purpose of developing intelligence tests for the mental rating of school children, payments to be made to the National Academy of Sciences.

Moved: That the National Research Council express its appreciation of the action of the General Education Board in appropriating a sum of $25,000 for the purpose of developing intelligence tests for the mental rating of school children, and extend a vote of thanks for this gift. (*Adopted.*)

Moved: That the sum of $450, or so much thereof as may be necessary, be appropriated from the funds available for the Engineering Division to cover the transportation expenses of certain members of the Committee on the Use of Tellurium and Selenium attending a meeting of the Committee to be held in Buffalo. (*Adopted.*)

Mr. Washburn presented a brief report of the initial meeting of the new Division of Chemistry and Chemical Technology held in Washington, March 21 and 22.

Moved: That the American Ceramic Society be invited to form with the Division a joint Committee on Ceramic Research. (*Adopted.*)

Moved: That the Committee on Synthetic Drugs be continued; and that the Committee on Explosives Investigations be continued temporarily. (*Adopted.*)

Moved: That the Council authorize the sending of a delegate to a meeting called by the Société de Chimie Industrielle to be held in Paris April 14, at which certain international chemical questions will be discussed and that the selection of this delegate be left to the Chairman and Chairman-elect of the Division, and the Chairman of the National Research Council. (*Adopted.*)

Moved: That Mr. Leuschner be elected Acting Secretary of the National Research Council from April 16 to June 30, 1919. (*Adopted.*)

Moved: That the Chairman appoint a Committee to consider all matters relating to organization of administration. (*Adopted.*)

Appointed: Messrs. Cross (Chairman), Clevenger, Hussey, Leuschner, Yerkes.

Moved: That the present Budget Committee be discharged and that the Chairman appoint a committee to consider the budget for the ensuing year. (*Adopted.*)

Appointed: Messrs. Leuschner (Chairman), Cross and Clevenger.

Moved: That the transportation expenses of the members of the Division of Biology and Agriculture attending the first meeting of the Division be met by the Council. (*Adopted.*)

Moved: That the President of the National Academy of Sciences be requested to appoint as members of the Research Council the representatives of societies and others nominated to membership in the Divisions of Engineering, Chemistry, and Physical Sciences, for such terms as have been or may be determined by lot in the Divisional meetings. (*Adopted.*)

The Chairman of the Division of Engineering recommended the approval of the following Committees:

Nominating Committee.—C. A. Adams (Chairman), E. P. Hyde, and Ambrose Swasey.

Executive Committee.—C. A. Adams, D. S. Jacobus, E. G. Spilsbury, and the Chairman and Vice-Chairman of the Division.

Publication Committee.—A. M. Greene (Chairman), E. P. Hyde, and E. G. Spilsbury.

Finance Committee.—W. R. Walker, (Chairman), Gano Dunn, C. F. Rand, and A. A. Stevenson.

Heat Treatment of Carbon Steel.—Henry N. Howe (Chairman), R. M. Boylston, and Albert Sauveur.

Pulverizing.—G. H. Clevenger (Chairman).

Committee on Insulation.—F. B. Jewett (Chairman), C. A. Adams, Leroy Clark, Wallace S. Clark, W. A. Delmar, F. M. Farmer, A. E. Kennerly, F. W. Peek, H. J. Shanklin, C. E Skinner, J. B. Whitehead.

Moved: That the Committees as recommended by the Engineering Division be authorized and that the appointment of the members as given above be approved. (*Adopted.*)

Mr. Clevenger presented a request of the American Welding Society that the National Research Council designate a representative for appointment as Director in the American Welding Society.

Moved: That in accordance with a request received from the American Welding Society the Division of Engineering be authorized to appoint a member of the Division as director in the American Bureau of Welding with full powers. (*Adopted.*)

The Acting Chairman, Mr. Merriam, presented a communication from Mr. W. A. Averill of the Central Bureau of Planning and Statistics requesting that a weekly report be presented on Friday of each week on the work of the National Research Council.

Moved: That in accordance with a request received from the Central Bureau of Planning and Statistics weekly reports of activities of the Research Council be transmitted to the Central Bureau of Planning and Statistics. (*Adopted.*)

The Acting Chairman, Mr. Merriam, announced the appointment on April 4, of the following committees and requested that these appointments be approved:

Committee on Organization *of the Division of Industrial Relations.*—Henry M. Howe, (Chairman), W. D. Bancroft, G. H. Clevenger, and E. F. Nichols.

Committee on Organization *of the Government Division.*—R. M. Yerkes (Chairman), W. D. Bancroft, and E. F. Nichols.

Committee on Program of National Research Council *for Meeting of National Academy of Sciences.*—A. O. Leuschner (Chairman), Whitman Cross, Henry M. Howe and R. M. Yerkes. (*Approved.*)

Mr. Howe, as Chairman, submitted a report of the Committee on Organization of the Division of Industrial Relations.

Moved: That the report of the Committee on Organization of the Division of Industrial Relations be adopted in the following amended form:

Organization of the Division of Industrial Relations

It is believed that the work of this Division, particularly its first work should be largely so directed as to stimulate industrial administrators to broaden their research activities, and to persuade the smaller industries to combine for the creation and maintenance of efficient research laboratories for the common good.

The chief contribution which the Research Council has to offer the industries is the organized assistance of its Divisions of Science and Technology which are directly available for suggesting problems of industrial research and coöperating in their solution. Hence, these Divisions will serve to stimulate the industries to carry out larger and more effective schemes of coöperative research, suggested by the Division of Industrial Relations.

The Division will require a Chairman and a Vice-Chairman. The Chairman should preferably be in a position to devote his whole time to the work and should possess the highest qualifications. He must be a man who can command the attention and respectful hearing of large industries. He should have the necessary directing and executive ability combined with the power to weld together the various schemes of coöperative research.

The Division of Industrial Relations should serve as the medium through which coöperation is secured for the Divisions of Science and Technology. The actual work of organizing and directing industrial researches will be the specific work of the Divisions of Science and Technology.

The Committee therefore infers that the need of activity on the part of this Division is not so pressing now as is the case with the Divisions of Science and Technology.

The Committee recommends that the Division be constituted as follows:

Ex Officio Members.—The Chairmen of the Divisions of Chemistry and Chemical Technology, Engineering, and Physical Sciences.

Representatives of Government Bureaus.—A representative each of the Bureaus of Chemistry, Mines, and Standards.

Members at Large.—At least eight representatives intimately connected with industrial research or highly experienced in industrial administration. (*Adopted.*)

Moved: That the present Committee on Industrial Research be requested to report nominations for membership on the Division of Industrial Relations in accordance with the approved constitution of the Division. (*Adopted.*)

Moved: That consideration be given to changing the functions of the present Advisory Committee of the Division of General Relations so that it may serve as an Advisory Committee to the Executive Board. (*Adopted.*)

Mr. Merriam, as Chairman of the Section on Relations with Educational Institutions and State Committees, presented a report on the organization of the Division of Educational Relations.

Moved: That in accordance with the report submitted by the Section on Relations with Educational Institutions and State Committees, the Division of Educational Relations be organized as follows:

Organization of the Division of Educational Relations

It is recommended that the Research Committees in educational institutions be asked to group themselves according to six regions; that the committees in each region be requested to form an organization consisting of one or more representatives from each committee, that this organization meet for conference on the problems of Research Committees at least once each year and elect a chairman for the group; and that the Chairman of each of the six regional organizations be nominated to represent the Research Committees in the Division of Educational Relations of the National Research Council.

The following organization of the six regions is recommended:

1. *Pacific Coast Region.*—Washington, Oregon, California, Idaho, Nevada, Utah, Arizona.
2. *West Central Region.*—North Dakota, South Dakota, Nebraska, Kansas, Montana, Colorado, Wyoming.
3. *East Central Region.*—Minnesota, Iowa, Wisconsin, Michigan, Illinois, Ohio, Indiana, Kentucky.
4. *South Central Region.*—New Mexico, Texas, Oklahoma, Missouri, Arkansas, Louisiana.
5. *South Atlantic Region.*—Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi,
6. *North Atlantic Region.*—Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia.

It is recommended that the membership of the Division of Educational Relations be constituted as follows:

Regional representatives of research committees in educational institutions	6
Association of American Universities	1
National Association of State Universities	1
Association of American Agricultural Colleges and Experiment Stations	1
Association of American Colleges	1
American Association of University Professors	1
United States Bureau of Education	1
Divisional Nominations, not to exceed	8
	20

It is recommended that the divisional nominations should represent investigators or educators of note who have given special consideration to the problem of research in educational institutions. (*Adopted.*)

Mr. Merriam, as Chairman of the Section on Relations with Educational Institutions and State Committees, presented a report on the organization of the Division of States Relations.

Moved: That in accordance with the report submitted by the Section on Relations with Educational Institutions and State Committees, the Division of States Relations be organized as follows:

Organization of the Division of States Relations

It is recommended that the State Research Committees be asked to group themselves according to six regions; that the committees in each region be requested to form an organization consisting of one or more representatives from each committee; that this organization meet for conference on the problem of state scientific organization at least once each year and elect a chairman for the group; and that the chairman of each of the six regional organizations be nominated to represent the States Committees in the Division of States Relations of the National Research Council.

The following organization of the six regions is recommended:

1. *Pacific Coast Region.*—Washington, Oregon, California, Idaho, Nevada, Utah, Arizona.
2. *West Central Region.*—North Dakota, South Dakota, Nebraska, Kansas, Montana, Colorado, Wyoming.
3. *East Central Region.*—Minnesota, Iowa, Wisconsin, Michigan, Illinois, Ohio, Indiana, Kentucky.
4. *South Central Region.*—New Mexico, Texas, Oklahoma, Missouri, Arkansas, Louisiana.
5. *South Atlantic Region.*—Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi.
6. *North Atlantic Region.*—Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Maryland, Delaware, District of Columbia.

It is recommended that the membership of the Division of States Relations be constituted as follows:

Regional representatives of State Research Committees	6
Representatives of the Divisions of Science and Technology, National Research Council	7
Representatives of the Division of Educational Relations, Division of Industrial Relations, and of the Research Information Service	3
Divisional Nominations—not to exceed	8
	24

(*Adopted.*)

Moved: That the Section on Relations with Educational Institutions and State Committees give further consideration to the apportionment of States in the regional divisions with reference to the organization of the Division of States Relations. (*Adopted.*)

Mr. Yerkes, on behalf of the Committee on Organization of the Government Division submitted the following report:

After consideration of the relations of the proposed Government Division to the other Divisions of General Relations and the possible functions of the proposed Government Division, the Committee decided to recommend that organization of the Government Division be postponed until the other Divisions of General Relations have been organized.

Moved: That in accordance with the recommendation of the Committee on Organization of the Government Division, the organization of the Government Division be postponed until the other Divisions of General Relations shall have been organized. (*Adopted.*)

Mr. Yerkes, Chairman of the Research Information Service, presented the following report on the organization of the Research Information Service and moved that it be approved:

Organization of the Research Information Service

It is recommended that the membership of the Committee include: (1) Representatives of the Divisions of the National Research Council, (2) Representatives of the Government Departments, and (3) members at large, as follows:

Representatives from the Council.—The Chairman of each Division.

Representatives from Government Departments.—One each for Agriculture, War, Navy, Commerce, Labor, Interior, Justice, State, Post Office, and Treasury.

Members at large.—The number not to exceed ten, representing institutions or other organizations of special importance for the Division.

The Committee would consist of thirty-three members, assuming the National Research Council representation to be thirteen, representation of Government Departments ten, and memberhip at large ten.

It is further recommended that appointments shall be so arranged that not more than one-third of the Committee membership shall retire in any one year.

The Committee would be expected to elect a Vice-chairman and to organize a small Executive Committee.

The following tentative plan of work for the Research Information Service is submitted:

1. The proper cataloguing, analysis, and filing of informational reports from various sources. (Force required two.)
2. Research personnel information. Preparation of catalogue to serve as research personnel directory. Coöperation with Editor of *American Men of Science* recommended. (Force one or two.)
3. Collection of information and investigation of ways of furthering scientific bibliographies, abstracts, and handbooks, especially analytical abstracts and handbooks. This involves survey of the present situation in coöperation with Committee on Aids to Scholarship of the Institute of International Relations. (Force two.)
4. Organization of scientific and technical research information. Establishing of contacts with informational sources. (Force one or two.) (*Adopted.*)

Moved: That the Interim Committee place itself on record as understanding that the Chairman of the National Research Council is ex officio a member of all committees. (*Adopted.*)

Moved: That Miss Ruth Cobb be appointed to assist with the work of the Research Information Service at a salary of $1800 a year, the appointment to take effect not later than May 1, 1919. (*Adopted.*)

The Chairman presented the resignation of Mr. S. J. Farnsworth, Engineering Associate to the Scientific Attaché at London, to take effect April 1.

Moved: That the resignation of Mr. S. J. Farnsworth as Engineering Associate to the Scientific Attaché at London, to take effect April 1, be accepted with regret, and that the Chairman express to him the appreciation of the Council for the valuable services which he has rendered. (*Adopted.*)

Moved: That Mr. Henry M. Howe be appointed Scientific Attaché to the American Embassy at Paris, with appointment to date from April 16, 1919. (*Adopted.*)

Moved: That Mr. Clevenger be appointed Acting Chairman of the Division of Engineering during the absence of Mr. Howe, the Chairman. (*Adopted.*)

Mr. Howe, Chairman of the Division of Engineering, recommended that the Division of Engineering be authorized to form a small committee to study the relation of Neumann bands in iron and steel to the rate of rupture as caused by explosions or other stresses. It was stated that this work could be carried on with little or no expense on account of the proposed coöperation of the Explosives Section of the Bureau of Mines and other agencies.

Moved: That the Division of Engineering be authorized to form a committee for the study of the relation of the Neumann bands in iron and steel to the rate of rupture as caused by explosions or other stresses. (*Adopted.*)

Moved: That the Acting Chairman appoint a nominating committee to nominate a Chairman, a Vice Chairman, and not more than ten members at large of the Executive Board of the National Research Council to be elected at a special meeting of the Executive Board on Wednesday, April 30, at 4 p.m. (*Adopted.*)

Appointed: Messrs. Hale (Chairman), Noyes, and Millikan.

Resolutions were proposed by the Treasurer and by the Acting Secretary of the Council to interpret the following former actions taken by the Executive Board:

Joint meeting of Board with Council of National Academy, February 11, 1919:

That the scale of annual salaries of the National Research Council be as follows: Chairman of the National Research Council, $10,000; Chairmen of Divisions of Science and Technology, $6,000, with an additional allowance of $1,000 for traveling expenses if they are sent abroad by the Council; Scientific Attachés, $6,000, until the Council is in a position to pay more.

Joint Meeting of Board with Council of National Academy, March 11, 1919:

That the new Divisions be considered to be effective when the divisional nominations have been approved by the Executive Board, and that present officers of Divisions shall continue to serve until their successors shall have been elected.

Interim Committee meeting, March 18, 1919:

That the first meeting of each of the permanent Divisions, at which the Division is organized and elects its officers and executive committee, be recognized as the annual meeting of the Division for this year.

Moved: That the resolution of February 11 be amended by the addition of the words "It is understood that this scale of salaries is to go into effect under the new organization on July 1, 1919, provided that officers elected under the new organization prior to that time shall be entitled to the foregoing salaries from the date on which they enter upon their duties on full time subject to special action of the Executive Board." (*Adopted.*)

Moved: That the resolution of March 11 be amended by the insertion of the words "under present salary arrangement" between the words "serve" and "until," and by the addition of the clause "and if they are elected to act for newly elected officers until the latter assume their duties, that they shall be entitled to the salaries provided for under the new organization subject to special action of the Executive Board." (*Adopted.*)

Moved: That consideration of individual cases that may come under these amended resolutions be referred to the Interim Committee with power. (*Adopted.*)

Mr. Cross presented a report of progress of the Committee on Organization of Administration with the following recommendation:

Moved: That William M. Davies and T. C. Mooney be appointed draftsmen at a salary of $125 a month from the date of their discharge from the army until further notice up to June 30, 1919. (*Adopted.*)

Mr. Leuschner, as Chairman of the Committee on Program of the National Research Council for the annual meeting of the National Academy of Sciences submitted the following recommendation:

Since all matters pertaining to the organization and activities of the National Research Council, which require action by the Academy, will be reported by the Council of the Academy at the regular business sessions of the Academy, the committee recommends that at the open meeting of the Academy on Wednesday afternoon, April 30, Dr. Hale present an address on the past work and future plans of the National Research Council and that this address be followed by brief statements of the work of individual divisions by their chairmen and by especially invited representatives of research activities related to the war. (*Approved.*)

The report of the Treasurer for the month ending March 31, 1919, was presented and placed on record.

Mr. Cross reported for the Budget Committee that an arrangement had been made by which disbursements for the London and Paris offices of the Research Information Service would be made through the Council of National Defense in Washington, after discontinuance of its disbursing office in London, about June 1.

Mr. Hale reported that in accordance with the resolution adopted March 11, 1919, at the joint meeting of the Executive Board with the Council of the National Academy of Sciences, authorizing a project of which the main purpose is to promote fundamental research in Physics and Chemistry in educational institutions primarily through the maintenance of a system of National Research Fellowships, a communication had been addressed by the President of the National Academy of Sciences and by the Chairman of the National Research Council to Dr. George E. Vincent, President of the Rockefeller Foundation, requesting an appropriation of $500,000, to be extended through a period of five years to enable the Council to carry out a project for promoting fundamental research in Physics and Chemistry in educational institutions in the United States through the maintenance of a system of National Research Fellowships in Physics and Chemistry and through such supplementary features as may promote the broad purpose of the project and increase its efficiency and that in reply to this request the following communication had been received from Mr. Edwin R. Embree, Secretary of the Rockefeller Foundation:

THE ROCKEFELLER FOUNDATION
61 BROADWAY, NEW YORK

April 10, 1919.

My dear Dr. Hale:

I have the honor to inform you that a meeting of the Executive Committee of the Rockefeller Foundation held April 9, 1919, the following resolutions were adopted:

RESOLVED that the sum of Fifty thousand dollars ($50,000) be, and it is hereby, appropriated, of which so much as may be necessary shall be paid to the NATIONAL RESEARCH COUNCIL during the year 1919 for the maintenance of a system of NATIONAL RESEARCH FELLOWSHIPS IN PHYSICS AND CHEMISTRY under the direction of the Research Board of that Council and in general conformity with the plans outlined in letter of application.

RESOLVED that the Rockefeller Foundation pledge itself to appropriate to the NATIONAL RESEARCH COUNCIL for the maintenance of a system of NATIONAL RESEARCH FELLOWSHIPS IN PHYSICS AND CHEMISTRY such additional sums for use in succeeding years as shall make available for expenditure during the period from May 1, 1919, to June 30, 1925, a total sum not to exceed Five hundred thousand dollars ($500,000), it being understood that the appropriation for any one year shall be for not more than One hundred thousand dollars ($100,000) plus any unexpended balances from appropriations for previous years.

Very truly yours,

EDWIN R. EMBREE,
Secretary.

Moved: That a committee be appointed to express to the Rockefeller Foundation the appreciation of the National Research Council for the Foundation's willingness to cooperate with the Council in the promotion of research, and of its munificence in supporting by the sum of Five Hundred Thousand Dollars the maintenance of National Research Fellowships in Physics and Chemistry.

Appointed: Messrs. Hale (Chairman), Noyes, and Millikan.

An announcement in regard to these Fellowships was issued by the National Research Council and is printed with these Minutes, page 313.

Mr. Yerkes, Chairman of the Research Information Service, presented a report of the Committee on Organization of the Government Division which was approved in the following amended form:

(1) The membership of the Government Division shall consist of the heads of such bureaus, civil and military, of Departments of the United States Government as shall be determined by the Executive Board of the National Research Council and by the Council of the National Academy of Sciences in accordance with Article V, Section I, of the Organization of the National Research Council.

(2) The Chairman of the Government Division shall be nominated by the Executive Board of the National Research Council and the President of the National Academy of Sciences shall be requested to present the name so nominated to the President of the United States for designation as Chairman of the Government Division.

(3) The Chairman of the Research Information Service shall be a member of the Government Division and shall serve as its Secretary.

The Executive Board concurred in the opinion of the committee that the Government Division has a very important function in bringing together at intervals the heads of scientific bureaus of the Government and in promoting effective coöperation between them and also between their several bureaus and the National Research Council.

Mr. Hale presented a report on the organization of the Division of Foreign Relations and stated that in so far as has been determined at this time the representation on the Division would be as follows:

Representing the State Department. Hon. William Phillips, Assistant Secretary of State.
Representing the National Academy of Sciences.—Foreign Secretary, George E. Hale.
Representing the American Philosophical Society.—Henry Fairfield Osborn.
Representing the American Academy of Arts and Sciences.—A. A. Noyes.

Mr. Noyes reported that the Division of Chemistry and Chemical Technology had considered the report to the Executive Committee of the International Research Council from the Committee on International Coöperation in Chemistry appointed at the Paris Conference and recommended that it be concurred in by the Council with certain changes proposed by the Division.

Moved: That the report of the Division of Chemistry and Chemical Technology with reference to the proposed International Chemical Council be referred to the Division of Foreign Relations with the understanding that Messrs. Bancroft, Noyes, and Washburn be invited to meet with the Division for consideration of the report.

In accordance with these resolutions the following recommendations in regard to the formulation of an International Chemical Council were approved.

1. That an International Chemical Council be constituted; and that, if possible, arrangements be made for transferring the funds originally given to the International Association of Chemical Societies to this International Chemical Council.

2. That the object of the International Chemical Council be to initiate and promote international cooperation in chemistry; for example, by arranging:

(a) for international cooperation in the preparation and publication of chemical literature.

(b) for the appointment of international commissions to deal with special chemical questions of standardization (such as atomic weights, nomenclature, etc.)

(c) for international cooperation in the prosecution of special research projects.

(d) for the calling of international chemical conferences for various purposes; and also for the organization of an International Chemical Congress with meetings at stated intervals, and including all of the scientific and technological branches of chemistry.

3. That the International Chemical Council be constituted of delegates representing the leading chemical societies and other chemical research organizations of the several allied and neutral countries, these delegates to be selects as described in Paragraph 5.

4. That the International Chemical Council be affiliated with the International Research Council; and that the National Research Council of each country or its National Academy when no Research Council has been created, act as the intermediary in communications between the International Chemical Council and the chemical organizations of that country, and arrange for the proper representation of those organizations in accordance with Paragraph 5.

5. That the delegates from each country shall in general be chosen by the major chemical societies in that country, but that the number and distribution of such delegates and their voting strength within the delegation be determined initially by the National Research Council of that country, with the understanding that in countries where a National Research

Council shall not have been organized the National Academy itself shall fulfill this function until the National Research Council is organized.

6. That upon all questions voted upon by the International Chemical Council the number of votes cast by the various countries shall be determined by their population as follows:

Countries of less than 5 million inhabitants have 1 vote.
Countries between 5 and 10 million inhabitants have 2 votes.
Countries between 10 and 15 million inhabitants have 3 votes.
Countries between 15 and 20 million inhabitants have 4 votes.
Countries over 20 million inhabitants have 5 votes.

The inhabitants of colonies and possessions are included in the population of the country to which they belong, according to the indications of its Government. Each self-governing Dominion has the same number of votes as an independent country according to the above scale.

7. That the International Chemical Council, as soon as it shall be organized, shall elect an Executive Committee of seven members, which shall exercise such functions as may be assigned to it by the Council. The Executive Committee shall appoint an Executive Secretary, who shall have charge of correspondence and of the central office of the Council.

8. That until the International Chemical Council shall be organized and its Executive Committee appointed, the Committee on International Cooperation in Chemistry appointed by the Paris Conference shall act as a provisional Executive Committee for purposes of organization. Its membership shall, however, be increased by the addition of four members representing industrial chemistry, to be appointed respectively by the Royal Society of London, the Academie des Sciences de France, the Academia dei Lincei, and the National Research Council of the United States. This Committee shall elect a chairman and a secretary; but the latter need not be a member of the Committee.

Mr. Leuschner reported that the Committee on the Enlargement of the Functions of the International Bureau of Weights and Measures, appointment of which had been previously authorized by the Interim Committee, was constituted as follows: S. W. Stratton, Chairman, Comfort A. Adams, Joseph S. Ames, Gano Dunn, Henry M. Howe, Edward B. Hyde, Albert A. Michelson, Ernest F. Nichols, Edward B. Rosa, and the Chairman of the Division of Physical Sciences—ex officio and that this Committee had submitted the following report:

Whereas, practically all scientific investigations and much technological work required uniformity in fundamental standards of measurement, values of physical constants, and methods of measurement; and

Whereas, there is at present no provision for bringing about this uniformity other than that of the Treaty establishing the International Bureau of Weights and Measures,—charged with matters pertaining to length and mass only.

It is Recommended,—that the Treaty providing for the establishing and maintenance of the International Bureau of Weights and Measures be amended to provide for the following functions:

1. To serve as a depository for such standards as require the preservation of prototypes at a central place, and to make comparisons between these prototypes and the national prototypes of countries subscribing to the Treaty.

2. To establish international values of constants by the correlation of data produced at the various national and other scientific laboratories, such as the mechanical equivalent of heat, melting points, boiling points, gravitation constant, fundamental electrical units, velocity of light, etc.

3. To undertake investigations concerning standards, constants, or methods of measurement, which from their nature must be undertaken jointly by the nations subscribing to the Treaty.

4. To correlate and utilize, as far as possible, the work of the various national and other laboratories pertaining to standards, or methods of measurement, and to promulgate the results.

5. To provide for an increase in the membership of the Committee charged with the direction of the work of the International Bureau in order to secure a group of experts representative of the wider range of subjects.

Moved: That the Executive Board of the National Research Council express approval of the principle contained in the suggestion of the Executive Committee of the Division of Physical Sciences, that the scope of the International Bureau of Weights and Measures be enlarged, and that steps be taken, in consultation with national and international bodies interested, to determine the constants to be included, with a view to enlarging the function of the Bureau in harmony with the existing work and jurisdiction of other international bodies. (*Adopted.*)

On behalf of the Committee on Enlargement of the Functions of the International Bureau of Weights and Measures, Mr. Leuschner recommended that Messrs. Comfort A Adams, Joseph S. Ames, and A. A. Michelson be appointed as a special committee to report on a wave length standard for a unit of length. (*Approved.*)

Mr. Leuschner, Acting Chairman of the Division of Physical Sciences, submitted the following recommendations:

1. That Messrs. William Bowie, F. R. Moulton and C. F. Marvin be appointed a Committee on Variation of Latitude of the American Section of the International Geophysical Union, to confer with a similar committee of the American Section of the International Astronomical Union and to make joint recommendations with this Committee in regard to the future organization of researches on the variation of latitude.

2. That Messrs. L. A. Bauer, William Bowie, Whitman Cross, H. F. Reid, C. F. Marvin, A. O. Leuschner, and R. S. Woodward (Chairman), be appointed a committee to prepare recommendations regarding international cooperation in geophysical subjects for consideration by the American Section of the International Geophysical Union, with the understanding that this Committee has power to increase its membership.

3. That Mr. William Bowie be appointed Acting Chairman of the American Section of the International Geophysical Union.

4. That the organization meeting of the American Section of the Geophysical Union be held in Washington in conjunction with the June meeting of the American Section of the International Astronomical Union.

Moved: That the foregoing recommendations be adopted and that the nominations be approved, and that the further organization of the American Section of the International Geophysical Union be left with its Acting Chairman with power. (*Adopted.*)

On motion of Mr. Howe, the Committee on Organization of the Division of Industrial Relations, was discharged.

Mr. Howe presented a communication from Mr. Alfred D. Flinn, Secretary of Engineering Foundation, transmitting a report of the Foundation's Committee on Relations with the National Research Council. Mr. Dunn directed attention to certain changes in the report concerning the membership of the Division agreed upon by the Engineering Division at its meeting in New York on April 12. The report as amended is as follows:

ENGINEERING FOUNDATION

Report of Committee on Relations with National Research Council

W. F. M. Goss, Chairman, Charles F. Rand, Silas H. Woodard, Frank B. Jewett Appointed at Meeting of Board, February 13, 1919.

April 10, 1919.

To Engineering Foundation Board:

Your Committee on Relations with National Research Council, after several meetings and conferences, recommends the approval by the Foundation Board of the following proposals:

1. Engineering Foundation, recognizing the desirability of maintaining close affiliation with National Research Council, proposes to collaborate with the Council "for the furtherance of research in science and engineering or for the advancement in any other manner of the profession of engineering and the good of mankind."

2. To contribute to the above end, as part of the policy of Engineering Foundation, office space in Engineering Societies Building has been engaged at the expense of Engineering Foundation, in addition to its own requirements, to serve as the New York office of the Engineering Division of the National Research Council, beginning May 1, 1919, and the Foundation, having brought its office to an adjacent room, in addition proffers to the Council and its Engineering Division, without charge, such secretarial services as the Foundation may from time to time determine.

3. National Research Council has proposed that its Engineering Division, comprising in all not less than 24 nor more than 29 members (of whom at least 7 and not more than 12 shall be members at large), be so organized as to include at least 5 members of Engineering Foundation, and (including these 5) 17 members of the Founder Societies. Engineering Foundation accepts this proposal as well calculated to meet the mutual requirements of the Foundation and the National Research Council.

4. Engineering Foundation proposes to collaborate with National Research Council in the activities of its Engineering Division and to make such appropriations of funds to aid specific undertakings of the Division as the Foundation may from time to time determine.

5. It is understood that all publications relating to research work in which the Foundation shall have participated, will be issued under the joint names of the Engineering Foundation and the National Research Council.

Respectfully,
W. F. M. Goss.
Chairman.

Moved: That the policy recommended by the Engineering Foundation's Committee on Relations with the National Research Council in its report of April 10, 1919, is acceptable to the National Research Council and will receive its approval if adopted by the Foundation, and that in anticipation of the adoption of the report by the Engineering Foundation the National Research Council express its appreciation of the Foundation's cooperation with the Council in the promotion of engineering research. (*Adopted.*)

Mr. Howe presented a recommendation of the Engineering Division that the number of members at large be increased from seven to twelve.

(*Approved.*)

Moved: That the Engineering Division move its offices to New York at as early a date as possible after May 1, 1919. (*Adopted.*)

Moved: That the material belonging to the National Research Council, with the exception of letter files and drawings now located in the shops of the Carnegie Institute of Technology at Pittsburgh, be turned over to that Institute with the request that they act as custodian of it until called for by the National Research Council. (*Adopted.*)

On behalf of the Division of Engineering, Mr. Howe offered the services of the Division to the National Research Fellowship Board in Physics and Chemistry.

On behalf of the Executive Committee of the Division of Medical Sciences, Mr. Hussey recommended that a grant of $800 from the funds of the Division be made to support the work of making an analysis of the psychological records of medical officers taken during the period of mobilization.

(*Approved.*)

Mr. Hale presented his resignation as Chairman of the National Research Council to take effect April 30, 1919.

The resignation of the Chairman was accepted with regret and the following resolution was unanimously adopted:

> RESOLVED: That as a mark of appreciation of the constructive services, characterized by accomplishment as well as vision, rendered in the early organization and in the past years chairmanship of the National Research Council by George Ellery Hale the Council in accepting the resignation of the Chairmanship he has just presented hereby creates and bestows upon him in perpetuity the title of Honorary Chairman of the National Research Council and requests the presiding officer to appoint a committee of three to prepare and inscribe in the records a suitable minute more fully setting forth the services rendered and more fully expressing the sense of obligation of the National Research Council.

The Chairman appointed Messrs. Dunn (Chairman), Noyes, and Walcott.

The Meeting adjourned at 1 p.m.

PAUL BROCKETT, *Assistant Secretary*.

NATIONAL RESEARCH FELLOWSHIPS IN PHYSICS AND CHEMISTRY

SUPPORTED BY THE ROCKEFELLER FOUNDATION

General Statement.—The National Research Council has been entrusted by the Rockefeller Foundation with the expenditure of an appropriation of $500,000 within a period of five years for promoting fundamental research in physics and chemistry primarily in educational institutions of the United States.

The primary feature of the plan is the initiation and maintenance of a system of National Research Fellowships, which are to be awarded by the National Research Council to persons who have demonstrated a high order of ability in research, for the purpose of enabling them to conduct investigations at educational institutions which make adequate provision for effective prosecution of research in physics or chemistry. The plan will include such supplementary features as may promote its broad purpose and increase its efficiency.

Purposes in View. Among the important results which are expected to follow from the execution of the plan may be mentioned:

(1) Opening of a scientific career to a larger number of able investigators and their more thorough training in research, thus meeting an urgent need of our universities and industries.